

### ABSTRACT OF THE DISCLOSURE

A fluid treatment device for reducing the level of a chemical compound in a fluid. The device comprises: a fluid inlet; a fluid outlet; a flow-through fluid treatment zone having comprising: a radiation source, an adsorbent and a photocatalyst. The fluid treatment zone is reversibly operable between: (i) a first mode in which the fluid flows in a first direction and at least a portion of the chemical compound is adsorbed on the adsorbent; and (ii) a second mode in which the fluid flows in a second direction different from the first direction in which the adsorbed chemical compound is exposed to radiation from the radiation resulting in photooxidation of the chemical compound.